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Analysis of dietary proteins derived from prey eggs and an embryonic cell line and their effects on the fecundity of *Orius insidiosus*

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The fecundity of the insidious flower bug, *Orius insidiosus* (Hemiptera: Anthocoridae), was poor when reared on a minimal artificial diet (control diet) composed of brewers yeast, soy protein hydrolysate and chicken yolk. Consequently, we supplemented test diets with homogenates of eggs from the Indian meal moth (*Plodia interpunctella*), proteins or lipids extracted from *Plodia* eggs, or an embryonic cell line (PIE) derived from *Plodia* eggs. Test diets were also supplemented with each of three fatty acids identified to be predominant in prey eggs (palmitic, linoleic and oleic acid), bovine serum albumin (BSA), chicken liver, beef liver, or chicken egg white albumin. Diets were compared against an optimal standard, *Plodia* eggs, and the control diet on the basis of the average total number of eggs a female oviposited during her lifetime. Only proteins derived from *Plodia* eggs and the cell line produced significant improvements in fecundity over the control diet at relatively low concentration of protein, indicating the quality of protein is important in selecting

supplements. Proteins extracted from prey eggs and the cell line were further separated by preparative isoelectric focusing and are being evaluated in the artificial diet.